

REMARKS

Claims 1- 6 were examined on their merits. Claims 7-8 have been restricted out of the present application in favor of a later-filed divisional application.

Art Rejection

1. Claims 1-2 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Mochizuki et al., U.S. Patent No. 4,313,180 ("Mochizuki"). Claim 1 is an independent claim. Applicant respectfully traverses this rejection for at least the reasons stated below.

To be an "anticipation" rejection under 35 U.S.C. § 102, the reference must teach every element and recitation of the Applicants' claims. Rejections under 35 U.S.C. § 102 are proper only when the claimed subject matter is identically disclosed or described in the prior art. Thus the reference must clearly and unequivocally disclose every element and recitation of the claimed invention.

In a non-limiting embodiment of the present invention, a data backup apparatus for use with on-vehicle equipment such as a car navigation system is provided. Specifically, a dynamic RAM (DRAM) having a plurality of memory areas is provided. A detection unit detects the state of the power supply such that when the switch of a vehicle key is in the ON position, the power is fed from the step-up/down power supply to the CPU and DRAM. When the switch is changed to the OFF position, the power supply detection unit detects a power supply OFF command. The CPU then sets the DRAM into a self-refresh mode to prevent the loss of data stored in DRAM. After switching the DRAM to self-refresh mode, the control unit switches the power supply source from the step-up/down power supply to the backup power supply. In short, the refreshing mode is not dependent on the operative state of the CPU.

Applicant respectfully submits that Mockizuki fails to disclose at least the following recitation of independent claim 1:

control means for arbitrarily changing, regardless of the operative state of a CPU, said dynamic RAM to a self-refresh mode when said detection means detects the OFF command of the main power supply, and feeding power from a backup power supply to said dynamic RAM.

Mochizuki is drawn to a refresh system for a dynamic memory wherein a refresh control circuit is connected to receive power from a backup battery included in an electronic apparatus. Specifically, when the main power is applied to the electronic apparatus, the DRAM receives a first refresh control signal derived from the CPU. However, when the main power supply is interrupted, the DRAM receives a second refresh control signal derived from the refresh control circuit which is operated by a small capacity battery. In short, the refresh operation in Mochizuki is automatically maintained by the external circuit when the CPU is reset or in accordance with the ON/OFF operation of the device.

Mochizuki, however, clearly fails to disclose a control means for arbitrarily changing, regardless of the operative state of a CPU, said dynamic RAM to a self-refresh mode when said detection means detects the OFF command of the main power supply, and feeding power from a backup power supply to said dynamic RAM. Unlike the claimed control means which utilizes the refreshing mode regardless of the operative state of the CPU, the external circuit shown in Figure 3 of Mochizuki is clearly dependent on the operational state of the CPU (*See Col. 1, lines 55-67*). As such the control signals generated by the external control circuit are dependent upon the CPU state.

Because Mochizuki fails to disclose each recitation, Mochizuki cannot possibly anticipate independent claim 1. The Examiner is therefore respectfully requested to withdraw the 35 U.S.C. § 102(b) rejection from claim 1 and from the claims that depend therefrom.

2. Claims 2 and 5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Mochizuki in view of Abe, U.S. Patent No. 5,590,082 ("Abe").

Claims 2 and 5 depend from independent claim 1. Mochizuki is deficient with respect to claim 1 for at least the reasons stated above. Therefore, the Examiner must rely on Abe to compensate for the foregoing deficiencies.

Abe is directed to a memory control circuit capable of reliably carrying out self-refresh starting operations to establish as self-refresh mode for a DRAM when the power supply is lowered. Abe, however, fails to disclose the above identified recitations with respect to independent claim 1. Therefore, Applicant submits that claims 2 and 5 are patentable at least by virtue of their dependency. The Examiner is therefore respectfully requested to withdraw the § 103(a) rejection.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880.

Amendment Under 37 C.F.R. § 1.111
U.S. Appln. No. 10/031,118

Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Richard C. Turner
Registration No. 29,710

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE



23373

PATENT TRADEMARK OFFICE

Date: April 14, 2003

APPENDIX
VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims are amended as follows:

1. (Amended) A data backup apparatus[,] comprising:

 a dynamic RAM for storing data;

 detection means for detecting an OFF command of a main power supply; and

 control means for arbitrarily changing, regardless of the operative state of a CPU,
said dynamic RAM to a self-refresh mode when said detection means detects the OFF command
of the main power supply, and feeding power from a backup power supply to said dynamic
RAM.